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USING VALUES AND ATTITUDES TO PREDICT BEHAVIOUR

TYOLOGY VERSUS SEGMENTATION: A DOMAIN SPECIFIC APPROACH TO MARKET SEGMENTATION

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INTRODUCTION

Since the introduction of the term market segmentation by W. Smith in 1956, marketing researchers recognize differences between groups of consumers to be opportunities. Market segmentation is not only the subdivision of a (consumer) market in homogeneous subgroups. The subgroups, the segments that are being distinguished must form a sound basis for product policy and communication policy. Market segmentation is then the counterpart of product differentiation. Product development and communication can be aimed and focussed at specific segments in the market.

How then to identify viable market segments or types of people as target groups for marketing activities?

Recently psychographic characteristics have become en vogue to typify and to describe groups of people. How fruitful are these psychographic variables, these personal values and value-systems to describe people and to explain behavioural differences such as brand choice?

The main question we address to in this paper is how fruitful psychographic variables are to identify market segments and annex to this: how fruitful are consumer typologies for market segmentation purposes.

In order to do so, we shall first inventory what approaches there exist to do segmentation research and then evaluate the use of psychographic variables and personal typologies based on such variables.

Then the domain-specific segmentation approach, the segmentation methodology and -techniques as well as the evaluation of segmentation outcomes will be discussed.

In both typology and market segmentation research a number of decisions have to be made. We shall discuss the major decision points involved in such a study, such as:

- * What person characteristics are chosen to typify people?
- * What decision to make on the segmentation method?

We will also address application issues, such as:

- * How to evaluate the outcomes of a segmentation study.
- * How to implement the typology or market segmentation results in marketing policy: in product differentiation and communication policy aimed at one or more market segments.

THE DECISION ON SEGMENTATION VARIABLES TO INCLUDE

Social class used to be the exclusive segmentation variable. Now society has become less vertical organised with more buying power across larger layers of society, the social class concept has lost its unique segmentation position. Other demographic variables, such as age, family type, education, often easier to operationalise, are used in addition. As buying power and social class have lost their discriminative power at a brand level, other more psychological characteristics like values and attitudes are being used as a basis for segmentation.

GENERAL PSYCHOGRAPHICS

The usage of psychological characteristics to typify people has a long tradition in psychology. Personality types such as the introverts and the extraverts go back to early psycho-analysis. More recently types such as the A and B types, are introduced in the 'stress' literature. In personality psychology many of these types and even more scales to measure them are used in extenso; for instance in a book such as Robinson and Shaver (1985) we find among others:

- Survey of Interpersonal Values (Gordon)
- Personal Value Scales (Scott)
- Value Profile (Bales and Couch)
- Dimensions of Values (Withey)
- Changes in Moral Values (Rettig and Pasamanick)
- Inventory of Values (Ewell)
- Value Survey (Rokeach)
- Ways to Live (Morris)
- Test of Value Activities (Shorr)
- Variations in Value Orientations (Kluckhohn and Strodtbeck)
- Many others

All of these scales have been heavily researched at in the social sciences.

Recently, the LOVS and the VALS types are being introduced in market research. Nowadays, these are the most popular personal value characteristics.

The list of values (LOVS) from Kahle, 1983, consists of the following personal values:

- Self-respect
- Security
- Warm relationships with others
- Sense of accomplishment
- Self-fulfillment
- Sense of belonging
- Being well respected
- Fun and enjoyment in life
- Excitement.

People are asked how important these values are for their lives. This list is a subset of a more complete list of Rokeach (1973), which consists of a list of 18 terminal values and 18 instrumental values, see table 1. The terminal values measure the relative importance of goals people have in their lives, the instrumental values express the importance of ways of behaving in reaching these goals.

TABLE 1: ROKEACH VALUE SURVEY: INSTRUMENTAL AND TERMINAL VALUES

<u>Instrumental values</u>	<u>Terminal values</u>
- Ambitious	- Comfortable life
- Broadminded	- Exciting life
- Capable	- A world at peace
- Cheerful	- Equality
- Clean	- Freedom
- Courageous	- Happiness
- Forgiving	- National security
- Helpful	- Pleasure
- Honest	- Salvation
- Imaginative	- Social recognition
- Independent	- True friendship
- Intellectual	- Wisdom
- Logical	- A world of beauty
- Loving	- Family security
- Obedient	- Mature love
- Polite	- Self-respect
- Responsible	- A sense of accomplishment
- Self-controlled	- Inner harmony

Social research shows 'happiness' and 'honesty' to be relative important values across the world. Rokeach also shows (1971) that people differ in their value orientation.

In a cross-cultural value survey study, Rokeach values were measured in 4 European countries: The Netherlands, Germany, United Kingdom and Italy (Research International Nederland, 1989, unpublished material.) Table 2 shows for each country the 4 most important terminal and instrumental values.

TABLE 2: CROSS-CULTURAL ROKEACH STUDY: RANKING OF THE 4 MOST IMPORTANT TERMINAL AND INSTRUMENTAL VALUES.

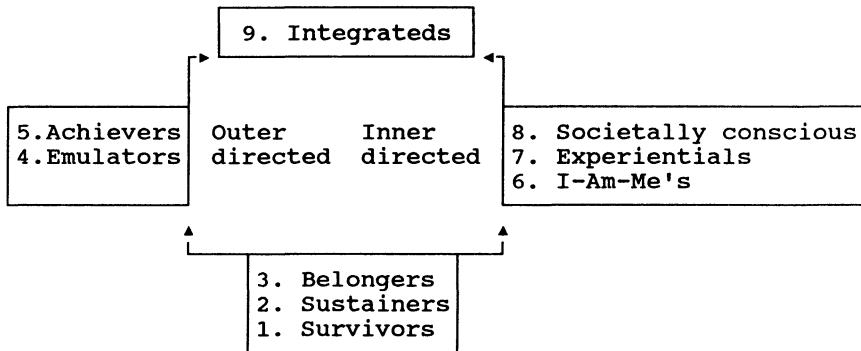
	The Netherlands	Germany	United Kingdom	Italy
Terminal values				
	1. Happiness 2. A world at peace 3. Family security 4. True Friendship	1. Family security 2. A world at peace 3. Happiness 4. True Friendship	1. Family security 2. Happiness 3. True Friendship 4. Self-respect	1. Family security 2. A world at peace 3. Self-respect 4. Freedom
Instrumental values				
	1.Honest 2.Responsible 3.Cheerful 4.Helpful	1.Honest 2.Responsible 3.Helpful 4.Loving	1.Honest 2.Loving 3.Responsible 4.Cheerful	1.Honest 2.Loving 3.Courageous 4.Polite

The results show some differences, at least in the rankings of the values in the different countries.

The VALS-approach (SRI, Mitchell, 1983) consists of measuring personal Values and Life-Styles (VALS).

On the bases of these variables people are grouped into nine types, see figure 1.

FIGURE 1: VALS-TYPES



In these nine personality types a personal development according to Maslow is assumed. In the lowest development phase people are need-driven: survivors are becoming sustainers. When these basic psychological needs are satisfied a person can develop and orient himself more socially. The next development is the 'belonger', mainly socially oriented. Then people can further develop along one of two lines:

outer directed line: emulator and achiever

inner directed line, respectively I-Am-Me, experiential and societally conscious.

A fully developed personality is labeled an 'integrated' personality.

A lot of research has been done with regard to this typology. Some key demographics of the VALS segments are given in table 3

TABLE 3: KEY DEMOGRAPHICS OF THE VALS SEGMENTS

	Age (median)	Sex (% female)	Race (% white)	Edu- cation (years)	Income (house- hold)
I <u>Need Driven</u>					
Survivors	66 ^a	60%	55%	8.5	<\$5,000
Sustainers	32	52	57	10	9,000
II <u>Outer</u>					
<u>Directed</u>					
Belongers	54	60	92	11	14,000
Emulators	28	48	76	12.5	19,000
Achievers	42	39	95	13.5	35,000
III <u>Inner</u>					
<u>Directed</u>					
I-Am-Me's	20	42	87	11.5	12,500
Experimentals	26	61	96	14	26,000
Societally Conscious	38	54	89	15	30,000
IV Integrations	40	54	93	16	

^a Age is expressed as median years, education as mean years completed, and income as median 1980 dollars per household in each segment.

Source: SRI International, VALS-Values and Lifestyles of Americans (Menlo Park, Calif., SRI International, undated) p. 4.

Another way to measure personal value orientation is by asking people about desired Activities Interests and Opinions, the so-called AIO's. These variables in combination with demographics express the life-styles of people. In this approach behavioural and attitudinal characteristics are mixed to describe people's way of living (see e.g. Wells and Tigert, 1971).

PSYCHOGRAPHICS AND BEHAVIOUR

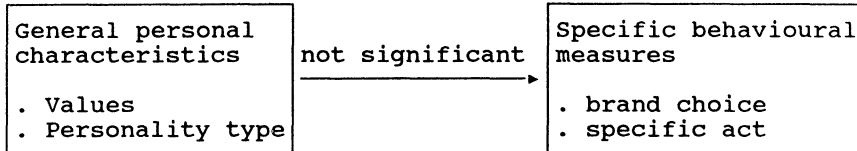
The LOVS and the VALS represent two approaches to the use of psychographics in advertising and marketing research. The LOVS and Rokeach use the scores of people on the separate scales to relate to verbal or overt behaviour measures such as brand choice. The VALS represent the typology approach in which score patterns are made per individual. Groups of people with similar value and life-style score patterns form the types that are being distinguished. These types are then compared with one another on behavioural characteristics.

Both these approaches are well-known in main stream psychology and denoted as the personality trait- and the personality type approach. In personality psychology a lot of theorising and research has been devoted to the fruitfulness and predictive power of personality scales such as the Gordon Profile, the Edwards Personal Preference Schedule, etc., see e.g. Edwards (1970). Recently it is recognised that such personality scales and personality types, except in psychopathological cases, do not explain behavioural differences very well. In personality psychology therefore the interaction of situation and personality is advocated as alternative for the traits/type approaches to personality. (Mischell, 1979).

The general conviction nowadays is that general personality characteristics are not very well suited to explain specific behavioural differences. This same conclusion has also been drawn for the area of consumer behaviour decennia ago by Van Veldhoven, 1973. In reviews such as Kassirjian's in 1971, it is concluded that at most 10% - others mention 2 to 5% - of behavioural differences such as differences in brand choice can be explained on the basis of general personality variables. For elaborate examples of such early studies see Evans, 1959, and Koponen, 1960.

From these consumer studies and the studies from psychology we may expect general person characteristics not to be good variables to predict specific behaviour in the market and hence not a good base for segmentation purposes; figure 2. (See also Leeflang and Beukenkamp, 1981).

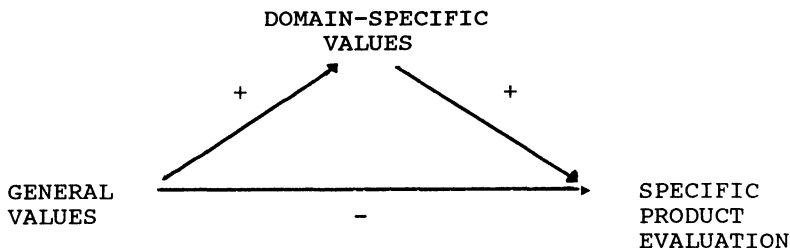
FIGURE 2: PERSON CHARACTERISTICS AND CORRESPONDING BEHAVIOUR



As alternative variables specific attitudes and opinions are suggested. In contemporary attitude theory (Ajzen and Fishbein, 1977) it is agreed that for a maximal correspondence between a person characteristic and a behavioural variable both have to be defined in similar elements with regard to time, context and target at which the behaviour is directed. Often this has been operationalised in studies as the need to very precisely describe attitudes and corresponding acts. However, the more defined the context is in which an act (brand choice) has to be explained, the less attractive it is for a researcher to measure corresponding attitudes. Why not measure behaviour directly then? Recent theorising (Weigel and Newman, 1976; Foxall, 1984; Verhallen and Pieters, 1984) argues for broadening the scope of the behavioural measure into a behavioural category or a behavioural domain or field.

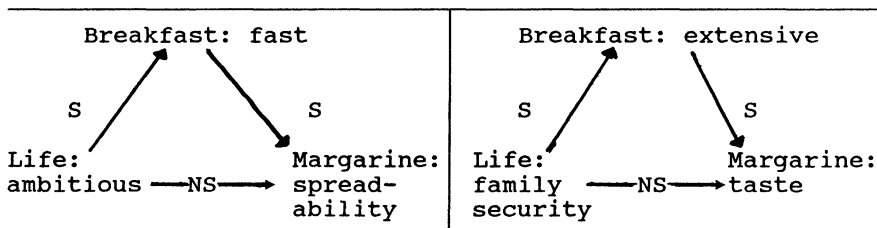
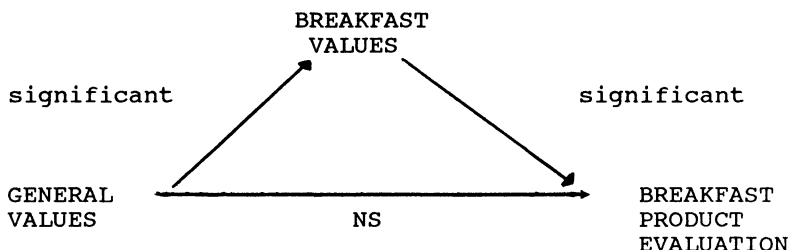
Also in segmentation studies there has been a plea to choose a middle level of generalisation somewhere between general behavioural measures and act-specific measures: the domain-specific segmentation approach (Vinson, et al, 1977). A domain can be described as an area of behaviour that is aimed at the same goal: vacation, dieting, travelling, etc. In figure 3, this theoretical idea with regard to the relationship between person characteristics and behavioural measures is depicted.

FIGURE 3: THE MODEL



In order to explain specific behaviour, values and attitudes with regard to the behavioural domain will better explain than general personal values. Results from a small scale study may clarify this, see figure 4 (Verhallen and De Nooij, 1982, unpublished material).

FIGURE 4: EXAMPLE BREAKFAST



In this small scale study both general personal values (Rokeach) were measured as well as the same values hold with regard to breakfast. Also the evaluation of breakfast products such as margarine was assessed.

General values corresponded significantly with domain specific (breakfast) values, but not with product evaluations. These breakfast evaluations correlated significantly with the specific product evaluations.

It was found for instance that housewives scoring high on family security as an important general life value wanted to have an extensive breakfast: the whole family at the table, completely with dishes, teapot and all other things. Persons wanting an extensive breakfast rated taste as an important characteristic for margarine. However, family security did not correlate directly with taste importance for margarine.

Another example from the same study: the general value 'ambition' correlated highly with a fast breakfast which correlated significantly with spreadability of margarine. A direct relation between the general value and the specific product evaluation could, however, not been found.

These studies lead to the following conclusions:

- General personal values/typologies do not correlate sufficiently with specific market behaviour, domain specific values however do.
- General values and life-style types are interesting additional characteristics to describe people.

We may conclude from this:

- Domain specific characteristics: domain specific values, domain specific attitudes and domain specific person characteristics are suited as active segmentation variables
- General person characteristics: general types, general personal values are only suited to further describe people and be used as passive segmentation variables.

SEGMENTATION METHODS

In the segmentation literature three approaches to segmentation are mentioned:

- forward segmentation
- backward segmentation
- simultaneous segmentation

SEGMENTATION METHODOLOGY

The first approach, forward segmentation, is the analysis of consumer characteristics. Here, consumers are assigned to groups by their similarity in one or more consumer characteristics. Subsequently, the differences between the groups are related to behavioural differences (i.e. forward segmentation). Two types of consumer characteristics are distinguished: general characteristics, such as sex, age, stage in life cycle, lifestyle, or personality; and situation-specific consumer characteristics, such as attitudes, opinions, perceptions, and preferences.

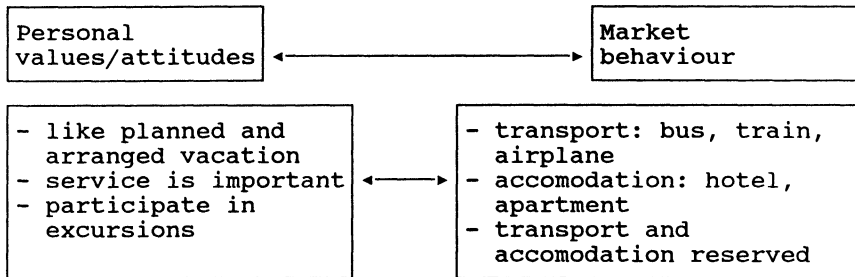
The second approach, the analysis of consumer response, assigns consumers to groups on the basis of their similarity in behavioural response to the supply of goods and services. Subsequently, the differences between the groups are related to general and/or object - and situation - specific consumer characteristics (i.e. backward segmentation).

The third approach, the simultaneous analysis of consumer characteristics and consumer response, assigns consumers to groups on the basis of the relationships between consumer characteristics and the behavioural response to the supply of goods and services.

In each approach, consumer characteristics are assumed to be relevant to the explanation of consumer response. Traditionally, the successive approaches (i.e. forward and backward segmentation) were used to specify segments. However, with canonical analysis, the relationship between consumer characteristics and consumer response can be established directly (Kuylen and Verhallen, 1981, Sheth, 1974).

In figure 5 an example from such a simultaneous segmentation study is given.

FIGURE 5: SIMULTANEOUS SEGMENTATION: THE ORGANISED VACATION

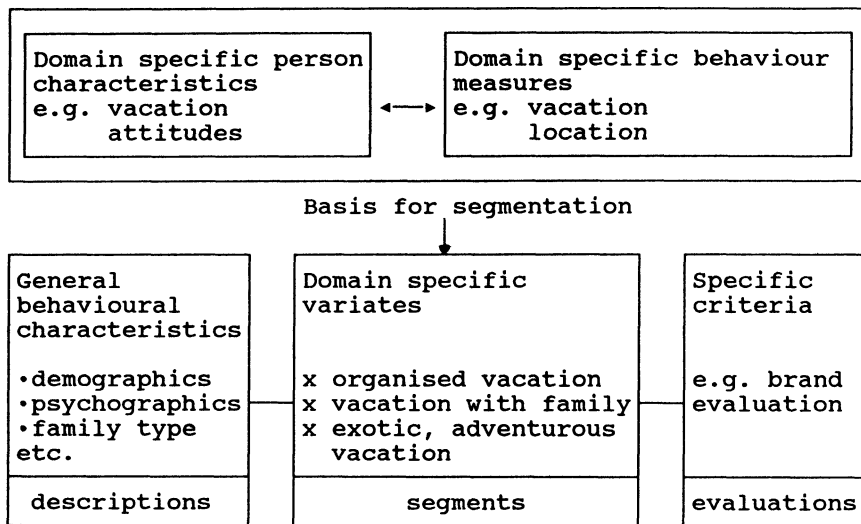


Oppedijk van Veen and Verhallen (1985) used canonical redundancy analyses on vacation behaviours at one hand and domain specific (vacation) motives and attitudes at the other. The first canonical variable or factor was 'the organised vacation', comprising of behaviours such as using organised transport: bus, train, or airplane and corresponding values and attitudes such as 'one should participate in organised excursions' or 'service is important'. These behaviour-value combinations proved in this study to be a fruitful basis for vacation segmentation.

THE SEGMENTATION MODEL AND SEGMENTATION PROCEDURE

In the foregoing the use of general and domain specific person characteristics were discussed in relation to segmentation. It is further argued to use the domain specific person characteristics as active segmentation variables in conjunction with domain specific behavioural measures. This leads to the segmentation model described in figure 6, page 14.

FIGURE 6: THE DOMAIN SPECIFIC SEGMENTATION MODEL



The basis for the proposed segmentation approach is then to relate domain specific person characteristics with the domain specific behavioural measures. By including the person characteristics simultaneously with the behavioural measures, the segments found are per definition as predictive in terms of behavioural criteria as possible. Canonical correlation analysis on these variables reveals a canonical variates solution. A variate is composed of a predictor (domain specific person characteristics) and a criterion part (domain specific behavioural measures). To interpret the variates, canonical loadings (contrary to canonical weights) can be used (Kuylen and Verhallen, 1981).

Grouping persons into segments may occur in several ways.

- Segments can be found by using a cluster algorithm on either the predictor or the criterion variate scores. Examples of such a procedure are provided by Fornell and Westbrook (1978) and Frank and Strain (1972).

Clustering directly on variate scores, however, doesn't necessarily keep intact the correspondence between person- and behavioural characteristics, as computed by canonical analysis. In order to avoid this disadvantage, two alternative approaches - using assignment rules - can be followed.

- The first alternative approach is to define segments by using one canonical variate at a time. Segments are defined on the basis of the highest loading variables at each canonical variate, i.e. on the criterion or predictor part of the variate. Since the variates are bipolar, for each variate 2 possible segments can be defined. Assuming a canonical correlation solution with 3 significant variates leads to defining 6 (3x2) segments. A consumer belongs to a segment if he or she scores positively (or negatively) on all defining variables. If a person does not score extreme on a variate, the consumer is not assigned to segments based on the variate.
- The second approach differs from the first in assigning consumers to segments based on the variate scores of all the variates together. Suppose a canonical correlation analysis reveals a 3 variate solution. For theoretical purposes, the assumption of a consistent relation between the predictor and criterion variate part on each variate is made. Segments can be defined now on the basis of either a positive or a negative variate score on each variate. Applying this assignment rule, 8 possible segments and 1 rest segment (with consumers who do not meet the assumption of a consistent relation between the predictor and criterion variate part on each variate) can be defined, see table 4

TABLE 4: DEFINING 8 SEGMENTS ON THE BASIS OF AN ASSIGNMENT RULE

	<u>Variate 1*</u>	<u>Variate 2</u>	<u>Variate 3</u>
Segment 1	+	+	+
Segment 2	+	-	-
Segment 3	+	-	+
Segment 4	+	+	-
Segment 5	-	+	+
Segment 6	-	-	-
Segment 7	-	-	+
Segment 8	-	+	-
Rest segment			

* The plus-sign indicates a positive variate score, whereas the negative sign indicates a negative variate score.

A consumer belongs to segment 1 if he or she has a positive variate score on variate 1, 2 and 3.

By assuming a consistent relation between the predictor and criterion variate part on each variate, not all consumers can be assigned to a segment. In the rest segment consumers with only 1 or 2 consistent variate relations will be present. If this rest segment becomes too large, a cluster algorithm is used to assign these consumers to one of the segments. Mean variate scores of each segment are used as starting points in the cluster algorithm (Research International Nederland, 1989, unpublished material).

In defining segments a choice can be made between assigning consumers to only one segment or to allow overlap between segments.

By allowing overlap it is possible to account for a large variety of person- and behavioural characteristics with only a small number of segments. Overlapping segments result in a more differentiated and more complete description of the individual consumers.

CONSTRUCTING A TYPOLOGY

In order to construct a typology, the segments based on the domain specific segmentation approach should be further described and typified by crossing them with all other variables, i.e. with psychographics (LOVS, VALS, Rokeach), demographics, socio-economics, media exposure and specific product- and brand attitudes or evaluations. A full description of each segment in terms of all sorts of characteristics is obtained.

EVALUATION CRITERIA

A number of criteria have to be met in developing usable segments for marketing policy goals.

According to Frank, Massy and Wind, 1972:

- Measurability: Identification of segments in terms of differences in individual and household characteristics or other 'measurable' characteristics should be possible.
- Accessibility: Segments should differ in the usage of specific behaviour. Segments are being reached in a 'communicative and distributive' manner. Segments should react differently to communicative, promotional, distributional and product-related stimuli.
- Substantiality and Stability: Segments should be of sufficient size for enabling specific marketing actions. The size of the segments should be relatively stable over time. Also, switching of consumers from one segment to another shouldn't happen too often (stability at an individual level).
- Congruity (Kollat, Blackwell and Robeson, 1972): Homogeneity within segments in terms of behavioural responses.
- Variation (Engel, Fiorillo and Cayley, 1972): Heterogeneity between segments.

These criteria can be met using a proper segmentation methodology inclusive a retest study to investigate the segments stability.

The discriminative power of the segmentation can be assessed by comparing the segments on specific criteria in the market such as brand choice, brand evaluations and brand attribute importance ratings. This provides the researcher with an independent criterion for the validity of the segments found.

CONSTRUCTION OF SEGMENT-SPECIFIC ASSIGNMENT RULES

Segmentation outcomes provide the policy maker with a differentiated view of the consumer market. The segments found may indicate possibilities for new products and better ways to communicate about products.

In order to ensure that changes in market structure can be monitored, it is advisable to construct a device, a short questionnaire, that may easily identify people as belonging to a specific segment. Therefore an assignment rule has to be constructed.

For each segment an unique profile can be constructed. By selecting only those variables on which the segment mean scores differ significantly from the overall mean scores (for all segments together), a segment can be typified. The domain specific behavioural and/or person variables should be the first variables to be taken into account for selection. Using these profiling variables a segment-specific assignment rule can be developed. Identification of segments based on only a few (domain specific) variables will be possible. This quick identification offers opportunities to monitor the market in an efficient way. The number of persons in each segment can be followed over time using a panel set-up.

DISCUSSION

In most markets, there is - from the marketing managerial point of view - an obvious need for market segmentation in order to cope with the large diversity of specific behaviours.

The aim of market segmentation is to find homogeneous subgroups of people with different patterns of behaviour.

Too often an unspecific segmentation approach is followed based on general person characteristics. The predictive value of such an approach and the stability over time of segments constructed on this basis is often not fully assessed.

General psychographics like LOVS, VALS and Rokeach turn out to be not very well suited to predict specific behaviour and hence form no good active segmentation variables. General psychographics are more suited as descriptors of people and therefore should be used as purely passive market segmentation variables.

In the present paper an approach to segmentation has been outlined with the following characteristics:

- The usage of domain specific characteristics as active segmentation variables.
- Simultaneous segmentation on both domain specific behavioural measures and domain specific person characteristics. For this, canonical analyses techniques are advocated. In the paper of Sikkel and Van Nieuwenhuyze (1989), this proceedings, latent budget analysis is proposed as an alternative to canonical correlation analysis also based on the simultaneous segmentation approach.
- The usage of general psychographic variables as passive, descriptive characteristics to typify people after the segments have been constructed.
- The construction of an assignment rule to easily identify people as members of a segment may also be recommended.

Following this route in segmentation, an alternative to life style segmentation is offered. The idea of staying as closely as possible in a product area ensures that strategic marketing decisions can be based on specific market knowledge.

REFERENCES

- Ajzen, I. and M. Fishbein, 1977. Attitude-behavior Relations: a theoretical analysis and review of empirical research. *Psychological Bulletin* 84, 888-918.
- Engel, J.F., H.F. Fiorillo and M.A. Cayley, 1972. Market Segmentation: Concepts and Applications. New York: Holt. Rinehart and Winston.
- Edwards, A.L., 1970. The measurement of Personality Traits by Scales and Inventories, Holt. Rinehart, Winston, New York.
- Evans, F.B., 1959. Psychological and Objective Factors in the Prediction of Brand Choice: Ford versus Chevrolet, *Journal of Business*, 32; 340-369.
- Fornell, C. and R.A. Westbrook, 1978. Identification of Consumer Information Gathering Approaches: Application of a Functional/Structural Segmentation Methodology. Paper presented at the annual meeting of the European Academy for Advanced Research in Marketing, Stockholm.
- Frank, R.E., W.F. Massy and Y. Wind, 1972. Market Segmentation. New York: Prentice-Hall.
- Frank, R.E. and C.E. Strain, 1972. A Segmentation Research Design Using Consumer Panel Data. *Journal of Marketing Research* 9, 385-390.
- Foxall, G.R., 1984. Evidence for Attitudinal-Behavioural consistency: implications for consumer research paradigms. *Journal of Economic Psychology* 5, 71-92.
- Kahle, L.R., 1983. Social Values and Social Change: adaptation to life in America, Kahle, L.R. (ed.) Praeger, New York, N.Y., 1983.
- Kollat, D.T., R.D. Blackwell and J.F. Robeson, 1972. Strategic Marketing. Holt. Rinehart and Winston. New York.
- Koponen A., Sept. 1960. Personality Characteristics of Purchasers. *Journal of Advertising Research*; 6-12.
- Kuylen A.A.A. and T.M.M. Verhallen, 1981. The Use of Canonical Analysis. *Journal of Economic Psychology* 1, 217-237.

Weigel, R.H. and L.S. Newman, 1976. Increasing Attitude-Behavior Correspondence by Broadening the Scope on the Behavioral Measure. *Journal of Personality and Social Psychology* 33, 793-802.

Wells, W.D., D.J. Tigert, 1971. Activities, Interests and Opinions. *Journal of Advertising Research*, 11, 4, Aug. 1971.